

CLAIMS

What is claimed is:

- 1 1. An exception handling mechanism comprising:
 - 2 an exception handler for recording exception information dependant on
 - 3 types of exceptions and programming tasks that encounter
 - 4 exceptions; and
 - 5 a recovery agent for taking an action upon an occurrence of an exception;
 - 6 wherein the action to be taken upon the occurrence of the exception
 - 7 corresponds to a type of exception and a programming task, and
 - 8 includes one or a combination of restarting the programming task,
 - 9 terminating the programming task, resetting a system running the
 - 10 programming task, and disregarding the exception.
- 1 2. The mechanism of claim 1 wherein the recorded exception information associated
- 2 with an exception is associated with a signature for identifying the recorded
- 3 exception information with its associated exception.
- 1 3. The mechanism of claim 2 wherein the signature includes a version of a program
- 2 running the programming task.
- 1 4. The mechanism of claim 1 wherein a plurality of sets of exception information for
- 2 a plurality of exceptions is maintained in the system running the programming
- 3 task; each set of exception information being associated with a signature for
- 4 identifying that set of exception information.

1 5. The mechanism of claim 1 wherein the recorded exception information associated
2 with an exception is associated with a signature for identifying the format of the
3 exception information.

1 6. The mechanism of claim 1 wherein the recorded exception information includes
2 data related to the program stack, including data to reconstruct the stack at time of
3 exception.

1 7. The mechanism of claim 1 further comprising an analysis tool communicating via
2 an interface with the system running the programming task, for identifying causes
3 of the exception.

1 8. The mechanism of claim 7 wherein the analysis tool uses a version to match the
2 object code of a program running the programming task to the source code of the
3 program.

1 9. The mechanism of claim 1 wherein the exception handler and the recovery agent
2 run on a first system embedded in a second system.

1 10. A processing system comprising:
2 a first system;
3 a second system embedded in the first system;
4 an exception handler running in the second system for recording exception
5 information upon an occurrence of an exception in the second
6 system; and

7 a recovery agent running on the second system, for taking an action upon
8 the occurrence of the exception based on the recorded exception
9 information;
10 wherein the action corresponds to a type of exception and a programming
11 task.

1 11. The processing system of claim 10 further comprising an analysis tool for
2 receiving, via an interface, the recorded exception information from the second
3 system and for identifying the cause of the exception.

1 12. The processing system of claim 10 wherein the second system includes non-
2 volatile memory for storing exception information.

1 13. The processing system of claim 12 wherein the exception information stored in the
2 non-volatile memory is compressed.

1 14. The processing system of claim 12 wherein the exception information stored in
2 non-volatile memory includes a plurality of sets of exception information, each set
3 being associated with an exception and a signature.

1 15. A computing system comprising:
2 an exception handler for recording exception information on non-volatile
3 memory upon an occurrence of an exception;
4 a recovery agent for taking an action upon the occurrence of the exception
5 based on the recorded exception information; and

6 an analysis tool for identifying the cause of the exception;
7 wherein the analysis tool receives the exception information from the non-
8 volatile memory via an interface interfacing a first system and a
9 second system running the exception handler and the recovery
10 agent.

1 16. The computing system of claim 15 wherein the second system is embedded in a
2 third system.

1 17. The computing system of claim 15 wherein the recorded exception information
2 includes data related to a program stack.